NHDES-W-06-012

WETLANDS PERMIT APPLICATION

Water Division/ Wetlands Bureau
Land Resources Management

Check the status of your application: www.des.nh.gov/onestop

RSA/Rule: RSA 482-A/ Env-Wt 100-900

Administrative Use Only		Administrative Use Only	File No.
			Check No.
			Amount
			Initials

1. REVIEW TIME: Indicate your Review Time below. To determine review time, refer to Guidance Document A for instructions.

☒ Standard Review (Minimum, Minor or Major Impact) ☐ Expedited Review (Minimum Impact only)

2. MITIGATION REQUIREMENT:

If mitigation is required a Mitigation-Pre Application meeting must occur prior to submitting this Wetlands Permit Application. To determine if Mitigation is Required, please refer to the Determine if Mitigation is Required Frequently Asked Question.

Mitigation Pre-Application Meeting Date: Month: __ Day: __ Year: ____

☐ N/A - Mitigation is not required

3. PROJECT LOCATION:

Separate wetland permit applications must be submitted for each municipality that wetland impacts occur within.

ADDRESS: **Route 101**			TOWN/CITY: **Dublin**
TAX MAP:	BLOCK:	LOT:	UNIT:
USGS TOPO MAP WATERBODY NAME: ☐ NA		STREAM WATERSHED SIZE: **unknown** ☐ NA	
LOCATION COORDINATES (If known): **42.91572, -72.10688** ☒ Latitude/Longitude ☐ UTM			

4. PROJECT DESCRIPTION:

Provide a brief description of the project outlining the scope of work. Attach additional sheets as needed to provide a detailed explanation of your project. DO NOT reply "See Attached" in the space provided below.

Replace an existing 3'x5' concrete box culvert with a new 5'x8' open bottom plastic arch.

5. SHORELINE FRONTAGE:

☒ NA This does not have shoreline frontage. SHORELINE FRONTAGE:

Shoreline frontage is calculated by determining the average of the distances of the actual natural navigable shoreline frontage and a straight line drawn between the property lines, both of which are measured at the normal high water line.

6. RELATED NHDES LAND RESOURCES MANAGEMENT PERMIT APPLICATIONS ASSOCIATED WITH THIS PROJECT:

Please indicate if any of the following permit applications are required and, if required, the status of the application.

To determine if other Land Resources Management Permits are required, refer to the Land Resources Management Web Page.

Permit Type	Permit Required	File Number	Permit Application Status
Alteration of Terrain Permit Per RSA 485-A:17	☐ YES ☐ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Individual Sewerage Disposal per RSA 485-A:2	☐ YES ☐ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Subdivision Approval Per RSA 485-A	☐ YES ☐ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED
Shoreland Permit Per RSA 483-B	☐ YES ☐ NO	____	☐ APPROVED ☐ PENDING ☐ DENIED

7. NATURAL HERITAGE BUREAU & DESIGNATED RIVERS:

See the Instructions & Required Attachments document for instructions to complete a & b below.

a. Natural Heritage Bureau File ID: NHB **17** - **3576**

b. ☐ Designated River the project is in ¼ miles of: _____; and
date a copy of the application was sent to the Local River Management Advisory Committee: Month: __ Day: __ Year: ____
☒ N/A

8. APPLICANT INFORMATION (Desired permit holder)

LAST NAME, FIRST NAME, M.I: **Belanger, Kevin, J.**

TRUST / COMPANY NAME: **NHDOT District 4** MAILING ADDRESS: **19 Base Hill Rd**

TOWN/CITY: **Swanzey** STATE: **NH** ZIP CODE: **03446**

EMAIL or FAX: **kevin.belanger@dot.nh.gov** PHONE: **603-352-2302**

ELECTRONIC COMMUNICATION: By initialing here: **KJB**, I hereby authorize NHDES to communicate all matters relative to this application electronically

9. PROPERTY OWNER INFORMATION (If different than applicant)

LAST NAME, FIRST NAME, M.I:

TRUST / COMPANY NAME: MAILING ADDRESS:

TOWN/CITY: STATE: ZIP CODE:

EMAIL or FAX PHONE:

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically

10. AUTHORIZED AGENT INFORMATION

LAST NAME, FIRST NAME, M.I: COMPANY NAME:

MAILING ADDRESS:

TOWN/CITY STATE: ZIP CODE:

EMAIL or FAX PHONE:

ELECTRONIC COMMUNICATION: By initialing here _____, I hereby authorize NHDES to communicate all matters relative to this application electronically

11. PROPERTY OWNER SIGNATURE:

See the Instructions & Required Attachments document for clarification of the below statements

By signing the application, I am certifying that:

1. I authorize the applicant and/or agent indicated on this form to act in my behalf in the processing of this application, and to furnish upon request, supplemental information in support of this permit application.
2. I have reviewed and submitted information & attachments outlined in the Instructions and Required Attachment document.
3. All abutters have been identified in accordance with RSA 482-A:3, I and Env-Wt 100-900.
4. I have read and provided the required information outlined in Env-Wt 302.04 for the applicable project type.
5. I have read and understand Env-Wt 302.03 and have chosen the least impacting alternative.
6. Any structure that I am proposing to repair/replace was either previously permitted by the Wetlands Bureau or would be considered grandfathered per Env-Wt 101.47.
7. I have submitted a Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) to the NH State Historic Preservation Officer (SHPO) at the NH Division of Historical Resources to identify the presence of historical/ archeological resources while coordinating with the lead federal agency for NHPA 106 compliance.
8. I authorize NHDES and the municipal conservation commission to inspect the site of the proposed project.
9. I have reviewed the information being submitted and that to the best of my knowledge the information is true and accurate.
10. I understand that the willful submission of falsified or misrepresented information to the New Hampshire Department of Environmental Services is a criminal act, which may result in legal action.
11. I am aware that the work I am proposing may require additional state, local or federal permits which I am responsible for obtaining.
12. The mailing addresses I have provided are up to date and appropriate for receipt of NHDES correspondence. NHDES will not forward returned mail.

Property Owner Signature	Print name legibly	Date
John Kallfelz	John Kallfelz	3/7/18

MUNICIPAL SIGNATURES

12. CONSERVATION COMMISSION SIGNATURE

The signature below certifies that the municipal conservation commission has reviewed this application, and:

1. Waives its right to intervene per RSA 482-A:11;
2. Believes that the application and submitted plans accurately represent the proposed project; and
3. Has no objection to permitting the proposed work.

	Print name **legibly**	Date
⇨		

DIRECTIONS FOR CONSERVATION COMMISSION

1. Expedited review ONLY requires that the conservation commission's signature is obtained in the space above.
2. Expedited review requires the Conservation Commission signature be obtained **prior** to the submittal of the original application to the Town/City Clerk for signature.
3. The Conservation Commission may refuse to sign. If the Conservation Commission does not sign this statement for any reason, the application is not eligible for expedited review and the application will be reviewed in the standard review time frame.

13. TOWN / CITY CLERK SIGNATURE

As required by Chapter 482-A:3 (amended 2014), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

Town/City Clerk Signature	Print name legibly	Town/City	Date
⇨			

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3,I

1. For applications where "Expedited Review" is checked on page 1, if the Conservation Commission signature is not present, NHDES will accept the permit application, but it will NOT receive the expedited review time.
2. IMMEDIATELY sign the original application form and four copies in the signature space provided above;
3. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
4. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board; and
5. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

1. Submit the single, original permit application form bearing the signature of the Town/ City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery.

14. IMPACT AREA:

For each jurisdictional area that will be/has been impacted, provide square feet and, if applicable, linear feet of impact

Permanent: impacts that will remain after the project is complete.

Temporary: impacts not intended to remain (and will be restored to pre-construction conditions) after the project is complete.

JURISDICTIONAL AREA	PERMANENT Sq. Ft. / Lin. Ft.		TEMPORARY Sq. Ft. / Lin. Ft.	
Forested wetland		☐ ATF		☐ ATF
Scrub-shrub wetland		☐ ATF		☐ ATF
Emergent wetland	47	☐ ATF	370	☐ ATF
Wet meadow		☐ ATF		☐ ATF
Intermittent stream		☐ ATF		☐ ATF
Perennial Stream / River	468 / 56	☐ ATF	200 / 8	☐ ATF
Lake / Pond	/	☐ ATF	/	☐ ATF
Bank - Intermittent stream	/	☐ ATF	/	☐ ATF
Bank - Perennial stream / River	57 / 20	☐ ATF	225 / 17	☐ ATF
Bank - Lake / Pond	/	☐ ATF	/	☐ ATF
Tidal water	/	☐ ATF	/	☐ ATF
Salt marsh		☐ ATF		☐ ATF
Sand dune		☐ ATF		☐ ATF
Prime wetland		☐ ATF		☐ ATF
Prime wetland buffer		☐ ATF		☐ ATF
Undeveloped Tidal Buffer Zone (TBZ)		☐ ATF		☐ ATF
Previously-developed upland in TBZ		☐ ATF		☐ ATF
Docking - Lake / Pond		☐ ATF		☐ ATF
Docking - River		☐ ATF		☐ ATF
Docking - Tidal Water		☐ ATF		☐ ATF
Vernal Pool		☐ ATF		☐ ATF
TOTAL	572 / 76		795 / 25	

15. APPLICATION FEE: See the Instructions & Required Attachments document for further instruction

☐ Minimum Impact Fee: Flat fee of $ 200

☒ Minor or Major Impact Fee: Calculate using the below table below

Permanent and Temporary (non-docking) **1367** sq. ft. X $0.20 = **$ 273.40**

Temporary (seasonal) docking structure: _____ sq. ft. X $1.00 = $ _____

Permanent docking structure: _____ sq. ft. X $2.00 = $ _____

Projects proposing shoreline structures (including docks) add $200 = $ _____

Total = **$ 273.40**

The Application Fee is the above calculated Total or $200, whichever is greater = **$ 273.40**


Box Culvert Location
Dublin NH
Route 101
412 Section
Existing 5'x3' Box Culvert
1:24,000
N
HARRISVILLE
Skatutakee
Dublin Pond
Howe Reservoir
Wright Pond
Hurricane Hill
Dark Pond
Stanford Pond
Substation
DUBLIN COUNTRY CLUB
RYAN STATE WILDLIFE MGMT AREA
STONE POND ROAD
RAILROAD GRADE
BM 389.1
BM 429.3
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NEW HAMPSHIRE DEPARTMENT OF Environmental Services

WETLANDS PERMIT APPLICATION – ATTACHMENT A
MINOR AND MAJOR - 20 QUESTIONS

Land Resources Management
Wetlands Bureau

Check the Status of your application: www.des.nh.gov/onestop

RSA/ Rule: RSA 482-A, Env-Wt 100-900

Env-Wt 302.04 Requirements for Application Evaluation - For any major or minor project, the applicant shall demonstrate by plan and example that the following factors have been considered in the project's design in assessing the impact of the proposed project to areas and environments under the department's jurisdiction. Respond with statements demonstrating:
1. The need for the proposed impact.
The existing box colvert is in poor condition and needs replacement.
2. That the alternative proposed by the applicant is the one with the least impact to wetlands or surface waters on site.
The alternative proposed will upsize the structure to improve capacity. It will also improve the crossings ability to pass debris and lessen the potential for future flooding, washouts, or damage. **The Department has evaluated the site and has included considerations to the impacts to environmental and cultural resouces into their design decisions. The proposed work efficently and effectively assesses and improves the crossing while reducing impacts to the area to the maximum extent possible.**

3. The type and classification of the wetlands involved.

R2UB12: Riverine, Lower Perennial, Unconsolidated Bottom, Cobble-Gravel Sand Bank

PEM1E: Palustrine, Emergent, Persistent, Seasonally Flooded/Saturated

4. The relationship of the proposed wetlands to be impacted relative to nearby wetlands and surface waters.

The unnamed stream is part of a marsh wetland complex.

5. The rarity of the wetland, surface water, sand dunes, or tidal buffer zone area.

The unnamed stream is not considered a rare resource.

6. The surface area of the wetlands that will be impacted.

468 sq. ft. permanent, 200 sq. ft. temporary Riverine Impacts

57 sq. ft. permanent, 225 sq. ft. temporary Bank Impacts

47 sq. ft. permanent, 370 sq. ft. temporary Emergent Wetland Impacts

7. The impact on plants, fish and wildlife including, but not limited to:
   a. Rare, special concern species;
   b. State and federally listed threatened and endangered species;
   c. Species at the extremities of their ranges;
   d. Migratory fish and wildlife;
   e. Exemplary natural communities identified by the DRED-NHB; and
   f. Vernal pools.

a-e. The results of the NH Natural Heritage Bureau database review (NHB17-3567) are enclosed. This review determined that no records for rare species, species of special concern, state listed threatened or endangered species, species at the extremities of their ranges, migratory fish and wildlife, nor exemplary natural communities were found within the project limits. Through the US Fish and Wildlife Services IPaC tool the only hit received was for the Federally listed threatened Northern Long-eared Bat. The Department's initial assessment, with guidance from the US Army Corp of Engineers, determined that these crossings / pipes are not suitable habitat (shallow pipes filled with water) and that the replacement will likely to not adversely affect the Northern Long-eared Bat. This however, is not an official determination nor has a determiniation been made by US Fish & Wildlife Services yet. A 4(d) consultation form has been submitted to the lead federal agency for this project, US ACOE, and they have advised that they will submit the form to US FWS for corrdination.

f. No vernal pools were identified within the project limits.

8. The impact of the proposed project on public commerce, navigation and recreation.

There will be a short duration of alternating one way traffic in order to excavate, remove, and replace the box with the plastic arch. Traffic will only be impacted temporarily and for a short period of time.

9. The extent to which a project interferes with the aesthetic interests of the general public. For example, where an applicant proposes the construction of a retaining wall on the bank of a lake, the applicant shall be required to indicate the type of material to be used and the effect of the construction of the wall on the view of other users of the lake.

The project would have no aesthetic impacts.

10. The extent to which a project interferes with or obstructs public rights of passage or access. For example, where the applicant proposes to construct a dock in a narrow channel, the applicant shall be required to document the extent to which the dock would block or interfere with the passage through this area.

The project will improve the safety of the public highway

11. The impact upon abutting owners pursuant to RSA 482-A:11, II. For example, if an applicant is proposing to rip-rap a stream, the applicant shall be required to document the effect of such work on upstream and downstream abutting properties.

The increased pipe size will increase flow capacity and improve the ablity of the pipe to pass debris and reduce the potential for flooding to upstream and downstream abutters.

12. The benefit of a project to the health, safety, and well being of the general public.

Improved Highway Safety.

13. The impact of a proposed project on quantity or quality of surface and ground water. For example, where an applicant proposes to fill wetlands the applicant shall be required to document the impact of the proposed fill on the amount of drainage entering the site versus the amount of drainage exiting the site and the difference in the quality of water entering and exiting the site.

The water quality should be the same before and after the project. Best Management Practices will be used to prevent any adverse effect to water quality during construction.

14. The potential of a proposed project to cause or increase flooding, erosion, or sedimentation.

The project as proposed will not increase the potential of flooding. The new pipe arch will increase the hydraulic capacity of the crossing. Current normal flows are not restricted, therefore the increase in area will not cause risk of downstream flooding.

The proposed replacement structure will not alter the velocity of the flow through the structure therefore erosion should not increase nor will any barriers to sediment transport be installed or created as a result of the project.

15. The extent to which a project that is located in surface waters reflects or redirects current or wave energy which might cause damage or hazards.

The water body involved in this project does not produce enough energy to makes waves that could cause damage.

16. The cumulative impact that would result if all parties owning or abutting a portion of the affected wetland or wetland complex were also permitted alterations to the wetland proportional to the extent of their property rights. For example, an applicant who owns only a portion of a wetland shall document the applicant's percentage of ownership of that wetland and the percentage of that ownership that would be impacted.

The work consists of repair/ replacement to existing culvert crossings. There are no similar structures in the immediate vicinity owned by other parties that would require repair/ replacement.

17. The impact of the proposed project on the values and functions of the total wetland or wetland complex.

The project proposes minimal impacts. The value of the wetland will not be changed as a result of this project. Work will be limited to immediate area around the culverts. The impacts will be to areas already influenced by their proximity to the roadway.

18. The impact upon the value of the sites included in the latest published edition of the National Register of Natural Landmarks, or sites eligible for such publication.

This project is not located in or near any of the following Natural Landmarks listed on the National Register.

19. The impact upon the value of areas named in acts of congress or presidential proclamations as national rivers, national wilderness areas, national lakeshores, and such areas as may be established under federal, state, or municipal laws for similar and related purposes such as estuarine and marine sanctuaries.

There are no areas named in an act of Congress or Presidential proclamations as national rivers, national wilderness areas, or national lakeshores that will be impacted as a result of this project.

20. The degree to which a project redirects water from one watershed to another.

This project will not change any flow patterns.

Additional comments

Dublin 41861

Mitigation Narrative

The Department is proposing to replace an existing 3'x5' concrete box culvert with a new 5'x8' open bottom plastic arch of the same length to the existing structure. The Department is proposing a single one-time payment into the arm fund in the amount of $6,439.68 for the 20 LF of cumulative permanent bank impacts and 6 LF of permanent channel impacts.

NHDES AQUATIC RESOURCE MITIGATION FUND STREAM PAYMENT CALCULATION		
INSERT LINEAR FEET OF IMPACT on BOTH BANKS AND CHANNEL	Right Bank	10.00
	Left Bank	10.0000
	Channel	6.0000
	TOTAL IMPACT	26.0000
	Stream Impact Cost:	$5,366.40
	NHDES Administrative cost:	$1,073.28
*********	TOTAL ARM FUND STREAM PAYMENT********	$6,439.68

StreamStats Report

Region ID: NH
Workspace ID: NH20171229144701614000
Clicked Point (Latitude, Longitude): 42.91565, -72.10734
Time: 2017-12-29 09:47:17 -0500

Dublin NH Route 101

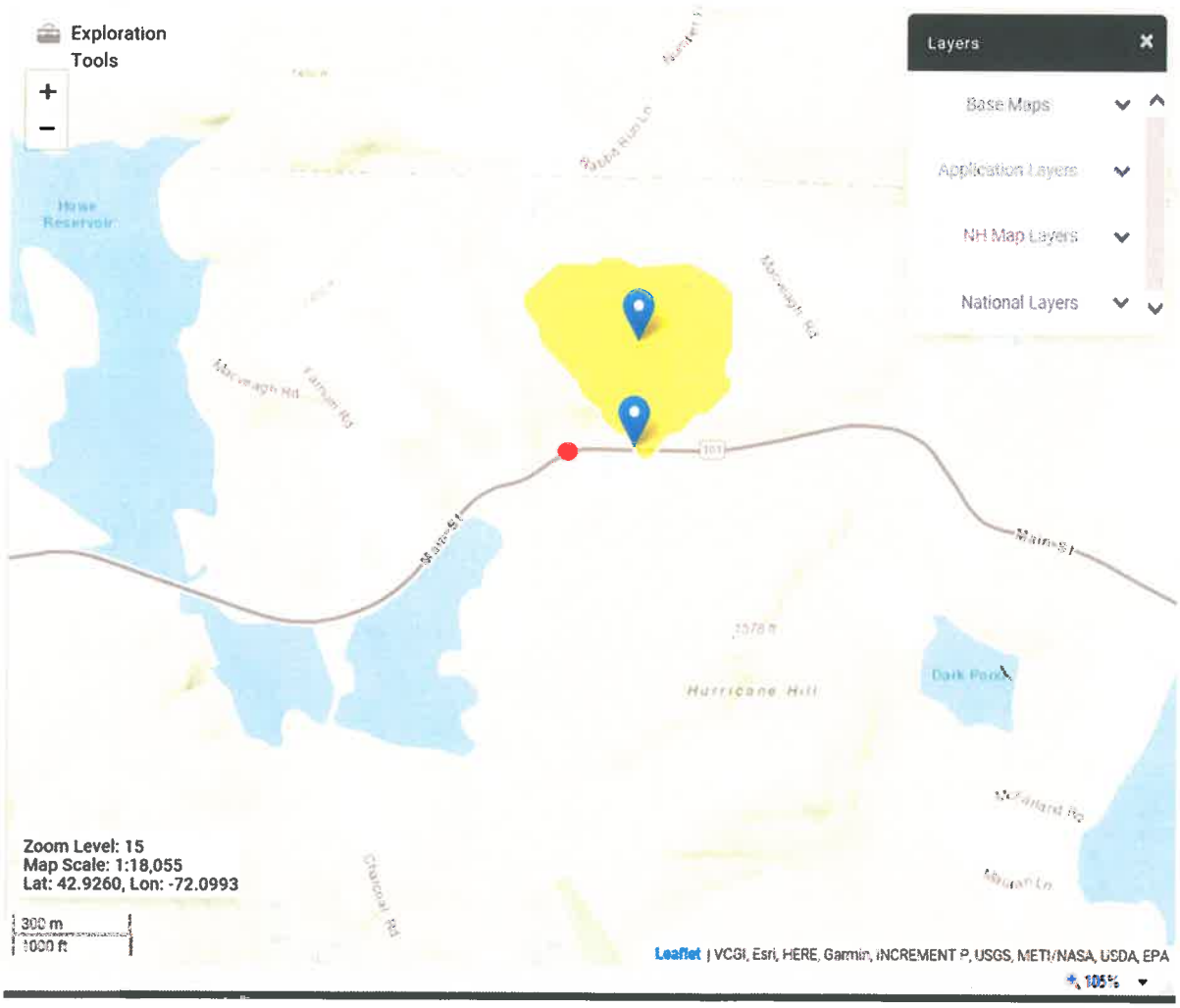
Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.03	square miles

Dublin – D4 Box Pipe Combine Culvert

When running USGS's StreamStats tool for the crossing location (42.91565, -72.10734) it calculated the drainage area from the north of the crossing. This is incorrect. The contributing water immediately upstream of the crossing flows from a marsh south of 101 to north through the project crossing and continues as a stream through a forested area north of 101. This was field verified. To the east of the project crossing there is a stream that crosses 101 from the north and flows south under 101 through a marsh area and then through the project crossing. This leads us to believe that the contributing water to the project crossing comes from north of the crossing to the east through the marsh to the south of 101 and then through the crossing. We have been unsuccessful in editing the drainage area in StreamStats to represent this and to identify a more accurate drainage area for the crossing.

We propose to file as an alternative design since we are unable to clearly identify what the contributing drainage area is and therefore what tier crossing it is.



NH Department of Transportation
District 4
Dublin Arch
Env-Wt 904.09 Alternative Design
TECHNICAL REPORT

Env-Wt 904.09(a) - If the applicant believes that installing the structure specified in the applicable rule is not practicable, the applicant may propose an alternative design in accordance with this section.

Please explain why the structure specified in the applicable rule is not practicable (Env-Wt 101.69 defines practicable as available and capable of being done after taking into consideration costs, existing technology, and logistics in light of overall project purposes.)

The existing box culvert is in tough shape and needs repair. Due to budget limitations the proposed plastic arch is the best alternative both improving the crossing and keeping with District 4 budget.

The proposed alternative meets the specific design criteria for Tier 2 and Tier 3 crossings to the maximum extent practicable, as specified below.

Env-Wt 904.05 Design Criteria for Tier 2 and Tier 3 Stream Crossings *– New Tier 2 stream crossings, replacement Tier 2 crossings that do not meet the requirements of Env-Wt 904.07, and new and replacement Tier 3 crossings shall be designed and constructed:*

(a) In accordance with the NH Stream Crossing Guidelines.

The proposed improvement has been developed in accordance with the NH Stream Crossing Guidelines. The Department has considered design alternatives based on general considerations that take the geomorphic conditions of the stream into account as it relates to the structure. The Department has determined that a full bridge replacement would not be practicable within this project's scope. As such, the Department has proposed an alternative design that meets the intent of the stream crossing guidelines to the maximum extent practicable.

(b) With bed forms and streambed characteristics necessary to cause water depths and velocities within the crossing structure at a variety of flows to be comparable to those found in the natural channel upstream and downstream of the stream crossing.

The existing structure is a closed bottom concrete box culvert; the proposed replacement will be an open bottom arch which will allow for natural sediments to settle and develop through the structure. The proposed streambed slope will be the same as the existing and changing the crossing to an open bottom water depths at a variety of flows will be comparable to those found in the natural channel upstream and downstream of the crossing.

(c) To provide a vegetated bank on both sides of the watercourse to allow for wildlife passage.

The upstream portion of the crossing is a wetland where there are no defined banks, however the wetland vegetation will provide habitat for wildlife, but not banks through the structure. There are vegetated banks that will remain after the replacement along the stream downstream of the

crossing. Aquatic organisms or mammals able to swim or walk through the water will be able to pass through the structure. Vegetated banks do not currently exist through the structure.

(d) To preserve the natural alignment and gradient of the stream channel, so as to accommodate natural flow regimes and the functioning of the natural floodplain.

The replacement structure will be an open bottom structure and will align with upstream and downstream gradients which will accommodate natural flow regimes.

(e) To accommodate the 100-year frequency flood, to ensure that (1) there is no increase in flood stages on abutting properties; and (2) flow and sediment transport characteristics will not be affected in a manner which could adversely affect channel stability.

There is no history of flooding at this location and the proposed new structure provides a larger flow capacity.

(f) To simulate a natural stream channel.

The existing structure is a concrete box with a concrete base. The new arch is open bottom with a natural bottom channel.

(g) So as not to alter sediment transport competence.

The proposed project will not impact the crossing's ability to completely transport sediment.

Env-Wt 904.09(c)(3) – The alternative design must meet the general design criteria specified in Env-Wt 904.01:

Env-Wt 904.01

(a) Not be a barrier to sediment transport;

The larger cross sectional area should improve the ability to transport any sediment in the flow.

(b) Prevent the restriction of high flows and maintain existing low flows;

Increasing the size will allow the structure to maintain existing flows. No barriers to sediment transport will be installed.

(c) Not obstruct or otherwise substantially disrupt the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction;

Changing the channel bottom from smooth concrete to a natural bottom should improve the potential movement of aquatic live thought the structure.

(d) Not cause an increase in the frequency of flooding or overtopping of banks;

The larger cross sectional area should improve the crossing's ability to pass larger storm flows. The existing crossing has no history of flooding or overtopping the banks currently, therefore the new crossing will continue to pass high flows.

(e) Preserve watercourse connectivity where it currently exists;

Watercourse connectivity currently exists; there are no perches or barriers to the culvert. Changing the bottom of the structure to an open bottom from the concrete bottom will also enhance connectivity with the natural bed upstream and downstream of the culvert.

(f) Restore watercourse connectivity where: (1) Connectivity previously was disrupted as a result of human activity(ies); and (2) Restoration of connectivity will benefit aquatic life upstream or downstream of the crossing, or both;

Watercourse connectivity currently exists; there are no perches or barriers to the culvert. Changing the bottom of the structure to an open bottom from the concrete bottom will also enhance connectivity with the natural bed upstream and downstream of the culvert.

(g) Not cause erosion, aggradation, or scouring upstream or downstream of the crossing; and

No changes to erosion, aggradation, or scouring are expected as a result of this project. The increased cross sectional area and added natural (rougher than the existing concrete bottom) stream bottom should not change the flow characteristics and not cause erosion, aggradation, or scouring.

(h) Not cause water quality degradation.

The project will not cause water quality degradation. While the crossing is under construction appropriate BMP's will be used to ensure the site is stable at all times and that stormwater runoff is treated appropriately.

******Note: An alternative design for Tier 1 stream crossings must meet the general design criteria (Env-Wt 904.01) only to the maximum extent practicable.***

New Hampshire Natural Heritage Bureau

To: Kevin Belanger
19 Base Hill Rd
Swanzey, NH 03446

Date: 11/29/2017

From: NH Natural Heritage Bureau

Re: Review by NH Natural Heritage Bureau of request dated 11/29/2017

NHB File ID: NHB17-3567 Applicant: Kevin Belanger

Location: Tax Map(s)/Lot(s):
Dublin

Project Description: Replace an existing 5'x3' box culvert

The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

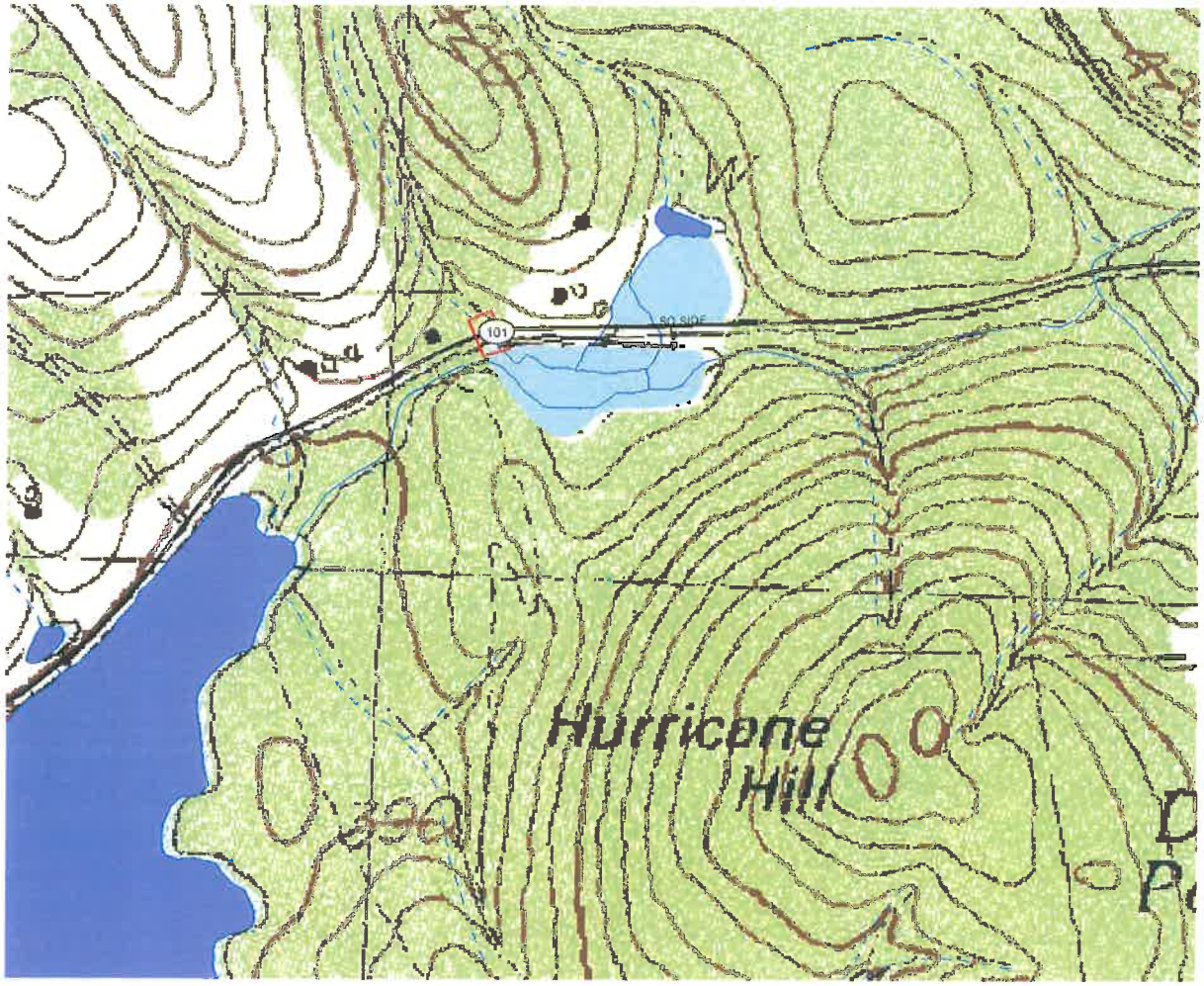
A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

This report is valid through 11/28/2018.

Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
172 Pembroke Road
Concord NH 03301

MAP OF PROJECT BOUNDARIES FOR NHB FILE ID: NHB17-3567



Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

DRED/NHB
172 Pembroke Road
Concord NH 03301

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To:
Consultation Code: 05E1NE00-2018-SLI-1154
Event Code: 05E1NE00-2018-E-02604
Project Name: Dublin Route 101 Box Culvert replacemetn with Pipe Arch

February 28, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-1154

Event Code: 05E1NE00-2018-E-02604

Project Name: Dublin Route 101 Box Culvert replacemetn with Pipe Arch

Project Type: TRANSPORTATION

Project Description: Replace an existing 5'x3' box culvert with a 8'x5' plastic open bottom arch.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.915625977135015N72.10719870218513W

Counties: Cheshire, NH

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Wetland Application – NHDOT Cultural Resources Review

For the purpose of compliance with regulations of the National Historic Preservation Act, the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the US Army Corps of Engineers' *Appendix C*, and/or state regulation RSA 227-C:9, *Directive for Cooperation in the Protection of Historic Resources*, the NHDOT Cultural Resources Program has reviewed the enclosed Standard Dredge and Fill Application for potential impacts to historic properties.

Proposed Project: Dublin Rt101 over unnamed perennial stream; District 4 Concrete Box Culvert replacement of a failing 3 ft X 5 ft with a 5 ft by 8 ft open bottom plastic arch; the box culvert has been obstructed by debris and a large boulder and these obstructions have resulted in flooding/overtopping; the concrete box was established due to a previous 36" corrugated metal pipe extension failure; evidence of a portion of the failed metal pipe remains on site

Above Ground Review

Known/approximate age of structure:
The corrugated metal pipes and concrete box culverts are 20th century elements;
Presumed post-1945

☒ No Potential to Cause Effect/No Concerns

Concrete box culverts are a post-1945 Section 106 excluded type under the Programmatic Comment.

☐ Concerns:

Below Ground Review

Recorded Archaeological site: ☐Yes ☒No

Nearest Recorded Archaeological Site Name & Number: 27-CH-0057 (no name)
☐Pre-Contact ☒Post-Contact

Distance from Project Area:
1816 ft (553 meters) west of project area

☒ No Potential to Cause Effect/No Concerns

Although the proposed plastic pipe is an increased size (15 sq ft to 26 sq ft bottom), the unnamed stream is part of a marsh that contributes to an unnamed pond to the southwest; the banks are comprised of cobble-gravel and sands; the surrounding area seasonally floods and becomes water saturated; and **Construction of the concrete box culvert and Route 101 disturbed much of the surrounding stratigraphy and the proposed increased size would not likely encounter substantive undisturbed areas**

☐ Concerns:

Reviewed by:

Olivia Chaves

NHDOT Cultural Resources Staff

3/5/2018

Date:

US Army Corps of Engineers
New England District

U.S. Army Corps of Engineers
New Hampshire Programmatic General Permit (PGP)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to "work" include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See PGP, GC 5 regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*		✓
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	✓	
2.2 Are there proposed impacts to SAS, shellfish beds, special wetlands and vernal pools (see PGP, GC 26 and Appendix A)? Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) website, www.nhnaturalheritage.org, specifically the book Natural Community Systems of New Hampshire.		✓
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	✓	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		✓
2.5 The overall project site is more than 40 acres.		✓
2.6 What is the size of the existing impervious surface area?		
2.7 What is the size of the proposed impervious surface area?		
2.8 What is the % of the impervious area (new and existing) to the overall project site?		
3. Wildlife	Yes	No
3.1 Has the NHB determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require a NHB determination.)	✓ No records	
3.2 Would work occur in any area identified as either "Highest Ranked Habitat in N.H." or "Highest Ranked Habitat in Ecological Region"? (These areas are colored magenta and green, respectively, on NH Fish and Game's map, "2010 Highest Ranked Wildlife Habitat by Ecological Condition.") Map information can be found at: • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html.		✓
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		✓
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		✓
3.5 Are stream crossings designed in accordance with the PGP, GC 21?	✓	

4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?		✓
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		n/a
5. Historic/Archaeological Resources		
If a minor or major impact project, has a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) been sent to the NH Division of Historical Resources as required on Page 5 of the PGP?**		

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.
** If project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.

Dublin 41861
Replace existing 5'x3' box culvert along Route 101

412 Section

Looking east on Route 101.

Looking Upstream

Dublin 41861
Replace existing 5'x3' box culvert along Route 101

412 Section

Google Earth Image Facing Upstream (south) from Route 101 at the Inlet of the Crossing

Upstream header of concrete blocks.

Dublin 41861
Replace existing 5'x3' box culvert along Route 101

412 Section

Facing towards the inlet of the crossing from upstream of the crossing

photo taken 2/22/18 after rain event and snow melt part of the roadway embankment collapsed

Inlet header.

Dublin 41861
Replace existing 5'x3' box culvert along Route 101

412 Section

Looking through the box.

Looking downstream.

Dublin 41861
Replace existing 5'x3' box culvert along Route 101

412 Section

Outlet Header

Facing Upstream Towards the Outlet

photo taken 2/22/18 after rain event and snow melt

Dublin 41861
Replace existing 5'x3' box culvert along Route 101

412 Section

Facing Upstream Towards the Outlet

photo taken 2/22/18 after rain event and snow melt

Previous 36" pipe extension failed and washed through box downstream of outlet

New Hampshire Department of Transportation
Bureau of Highway Maintenance, Project
Dublin NH
Box Culvert Replacement

Construction Sequence

1. Install erosion control measures upstream and downstream (silt socks, sand bags, etc.). Build temporary dam at inlet side so water can be pumped around work area during work hours as needed.

2. Build and pave temporary widening and install temporary signals and traffic control measures.

3. Excavate and prepare sub-grade and install new footing blocks. Infill between footing blocks with large boulders and infill with natural bottom material. On first half of the structure.

4. Place plastic arch, build outlet header and backfill. Mulch and seed slopes.

5. Pave first half of work, shift traffic to newly constructed portion. (temporary widening may be required.)

6. Repeat steps 3 and 4 on the inlet side of the structure.

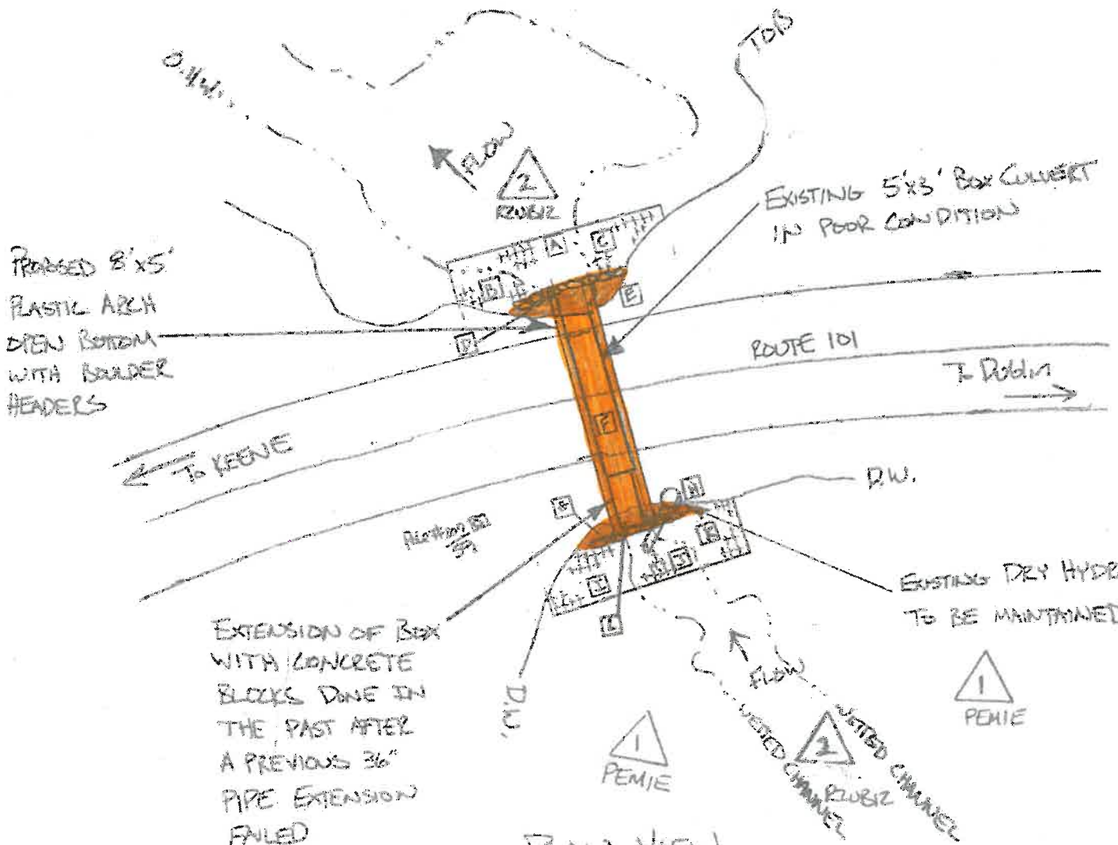
7. Humus seed and mulch slopes.

8. Pave area back to finish grade, remove temporary signals, remove temporary widening that was required, do final cleanup and seeding of slopes.

9. Maintain temporary erosion control measures until area is stabilized.

Note:

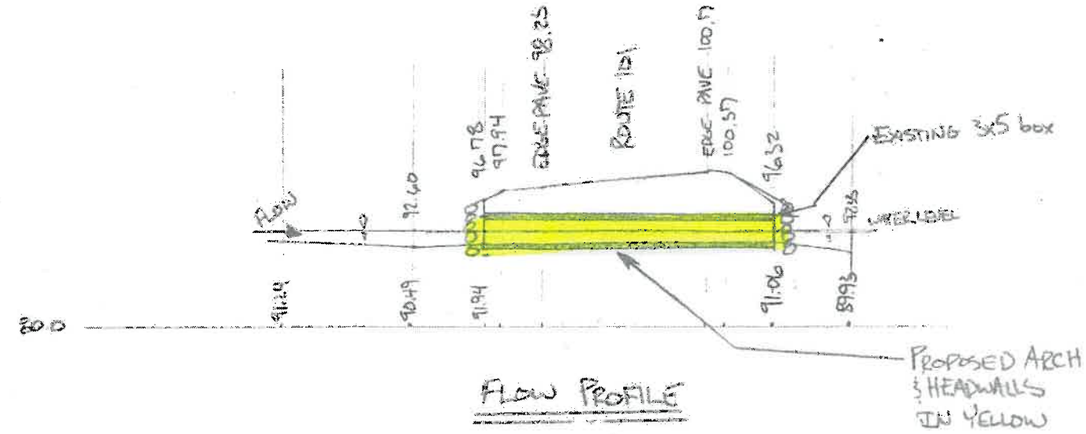
DUBLIN CULVERT
ROUTE 101



PLAN VIEW

DRAWN BY: KSB

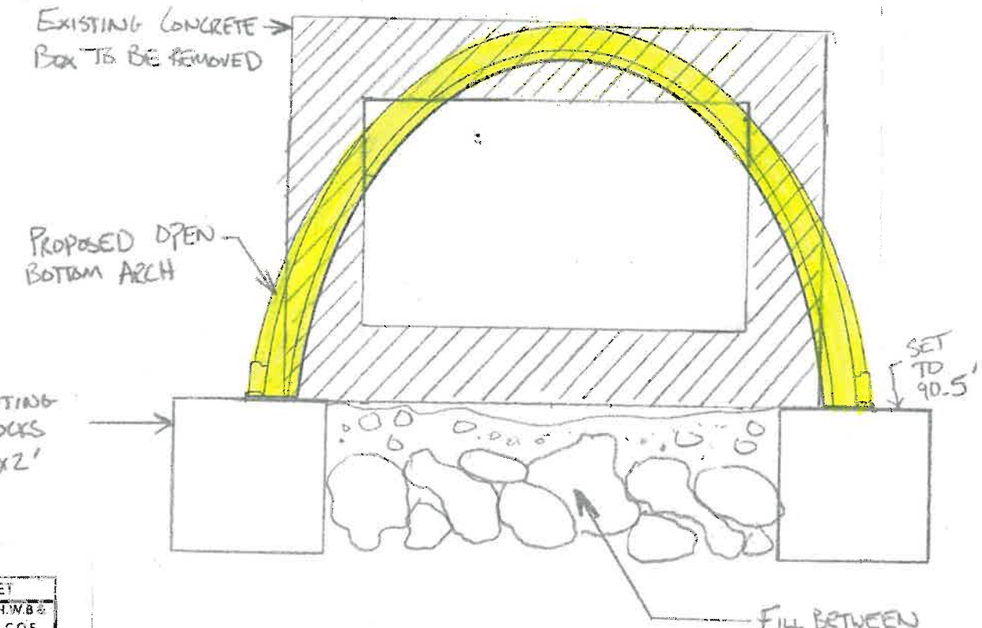
SCALE: 1"=30'



FLOW PROFILE

1" = 30' HORIZONTAL

1" = 20' VERTICAL



CROSS SECTION

1" = 20'

LEGEND

TYPE OF WETLAND IMPACT	PERMANENT IMPACT
N.H.W.B. (NON-WETLAND)	
N.H.W.B. & A.C.O.E. (WETLAND)	

N.H.W.B. – NEW HAMPSHIRE WETLANDS BOARD
A.C.O.E. – ARMY CORPS OF ENGINEERS

ORDINARY HIGH WATER (OHW)

TOP OF BANK (TOB)

M — WETLAND DESIGNATION NUMBER

X — WETLAND IMPACT LOCATION

M — WETLAND MITIGATION AREA

TEMPORARY IMPACTS

MITIGATION

WETLAND #	USFWS WETLAND CLASSIFICATION	LOCATION	AREA IN SQUARE FEET: N.H.W.B NON-WTLND	AREA IN SQUARE FEET: N.H.W.B & A.C.O.E WETLAND	AREA IN SQUARE FEET: TEMPORARY IMPACTS	LINEAR FEET: N.H.W.B NON-WTLND	LINEAR FEET: N.H.W.B & A.C.O.E WETLAND
	R2UB12	A			200		8
	BANK	B			90		9
	BANK	C			135		8
	BANK	D	25				10
	BANK	E	32				10
	R2UB12	F		428			50
	PEM1E	G		25			10
	PEM1E	H		22			10
	PEM1E	I			150		12
	PEM1E	J			100		10
	PEM1E	K			120		12
	R2UB12	L		40			6
			57	515	795	0	155

PERMANENT IMPACTS 572 SQ-FT 155 LINEAR FT

TEMPORARY IMPACTS 795 SQ-FT